

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-026834**Date Inspected:** 07-Dec-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

CWI Name:	Fred Von Hoff and Salvador Merino			CWI Present:	Yes	No	
Inspected CWI report:	Yes	No	N/A	Rod Oven in Use:	Yes	No	N/A
Electrode to specification:	Yes	No	N/A	Weld Procedures Followed:	Yes	No	N/A
Qualified Welders:	Yes	No	N/A	Verified Joint Fit-up:	Yes	No	N/A
Approved Drawings:	Yes	No	N/A	Approved WPS:	Yes	No	N/A
				Delayed / Cancelled:	Yes	No	N/A
Bridge No:	34-0006			Component:	SAS OBG		

Summary of Items Observed:

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At OBG 14E-PP125-E4- #2 lifting lug hole infill plate to top deck plate inside, QA randomly observed ABF/JV qualified welder Erick Sparks continuing to perform CJP groove welding repair. The welder was observed welding in the 4G (overhead) position utilizing Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1004-Repair for the Seismic Performance Critical Member (SPCM) butt joint. Prior the repair excavation, the weld butt joint and adjacent base metal were preheated to more than 225 degrees Fahrenheit using propane gas torch. After the excavation and subsequent smooth grinding, ABF QC Salvador Merino was observed performing Magnetic Particle Testing (MT) on the boat shape excavations with no significant defects noted during the test. The excavations and adjacent base metal were again preheated to more than 325 degrees Fahrenheit prior welding. ABF QC Salvador Merino was noted monitoring the welder at the time of the repair with measured working current of 130 amperes on a 1/8" diameter E7018H4R electrode. The welding repair located at Y-65 having dimensions of 50mm long x 18mm wide x 7mm deep was completely welded during the shift and was Post Weld Heat Treated (PWHT) at 450 degrees Fahrenheit for one (1) hour as required using the Miller Proheat 35 Induction Heating System.

At OBG 13E/14E top deck plate 'A2.2' outside, QA randomly observed ABF/JV qualified welder Jin Pei Wang perform CJP groove welding repair. The welder was observed welding in the 1G (flat) position utilizing Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing welding procedure

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ABF-WPS-D15-1004-Repair for the Seismic Performance Critical Member (SPCM) splice butt joint. Prior the repair excavation, the weld butt joint and adjacent base metal were preheated to more than 225 degrees Fahrenheit using propane gas torch. After the excavation and subsequent smooth grinding, ABF QC Fred Von Hoff was observed performing Magnetic Particle Testing (MT) on the boat shape excavation with no significant defects noted during the test. The repair excavation was preheated to more than 325 degrees Fahrenheit using Miller Proheat 35 Heating Induction System with blanket located at the top side of the weld joint being welded then moved the heater blanket to the side after reaching the required preheat temperature. During the shift, ABF QC Fred Von Hoff was noted monitoring the welder with 136 amperes measured working current on the 1/8" diameter E7018H4R electrode. The first time repair located at Y=1890mm having dimensions of 95mm long x 20mm wide x 17mm deep was completely welded during the shift and was Post Weld Heat Treated (PWHT) at 450 degrees Fahrenheit for one (1) hour as required using the Miller Proheat 35 Induction Heating System.

At OBG 14E-PP127.2-E5 vent hole infill plate to top deck plate inside, ABF welder Erick Sparks was observed continuing to perform 1G Shielded Metal Arc Welding (SMAW) welding root pass on the infill plate to top deck plate butt joint. The welder was noted using 1/8" diameter E7018H4R implementing Welding Procedure Specification (WPS) ABF-WPS-D15-1050A-CU Rev.1 for the Seismic Performance Critical Member (SPCM) butt joint. Prior welding, ABF QC Salvador Merino was noted checking the fit up alignment of the infill plate to the deck plate with positive result. QA verified the alignment and noted same result. During welding, ABF QC Salvador Merino was noted monitoring the welder's welding parameters with measured working current of 130 amperes on the 1/8" diameter E7018H4R electrode. The welder was noted preheating the plates to more than 150°F using propylene gas torch prior welding. During the shift, fill pass welding was still continuing when the welder has to leave early due to his dental appointment.

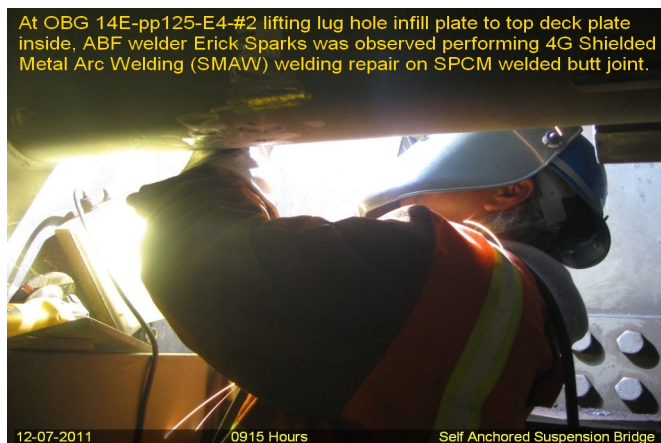
At OBG 13E/14E side plate 'E' inside, QA randomly observed ABF/JV qualified welder Jin Pei Wang perform CJP groove (splice) welding root then on the splice butt joint. The welder was observed perform manual welding in the 3G (vertical) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3042B-1. The joint being welded has a single V-groove butt joint with backing bar. The splice joint was preheated and maintained to greater than 150 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blankets located at the opposite side of the plate prior/during welding. During welding, ABF Quality Control (QC) Fred Von Hoff was noted monitoring the welding parameters of the welder with measured working current of 270 amperes and working voltage of 25.2 volts. Prior welding, this QA verified the alignment where 5mm offset was noted previously. ABF personnel were noted working on it and it came down to 3mm. According to QC, this is the best ABF could do to make the correction but informed this QA that QC will map the unacceptable misalignment and submits it to ABF for further evaluation. At the end of the shift, welding of the root pass on the splice butt joint was still continuing and should remain tomorrow.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT/MT of the Complete Joint Penetration (CJP) welding of nine (9) vent/lifting lug hole infill plates to top deck plate butt joints. The QA verification was performed to verify that the welding and the VT/MT inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the weld and the QC inspection complied with the contract documents.

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1. OBG 14E-PP126.7-E2.5 vent hole infill plate to deck plate outside - QA VT/MT verified
2. OBG 14W-PP126.2-W2.6 vent hole infill plate to deck plate outside - QA VT/MT verified
3. OBG 14W-PP126.2-W2.8 vent hole infill plate to deck plate outside - QA VT/MT verified
4. OBG 14W-PP126.7-W2.5 vent hole infill plate to deck plate outside - QA VT/MT verified
5. OBG 14E-PP127.2-W2 vent hole infill plate to deck plate outside - QA VT/MT verified
6. OBG 14E-PP127.2-W5 vent hole infill plate to deck plate outside - QA VT/MT verified
7. OBG 13E/14E side plate 'H' inside - QA VT/MT verified



Summary of Conversations:

No significant conversation occurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer